



Research, Development and Engineering Center Contract Opportunities

**Presented by: Dr. Louis C. Marquet
Director**

7 May 02

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CECOM Bottom Line: THE WARFIGHTER

Report Documentation Page

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Abstract		
Subject Terms		
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Classification of Abstract unclassified	Limitation of Abstract UU	
Number of Pages 68		



RDEC Mission

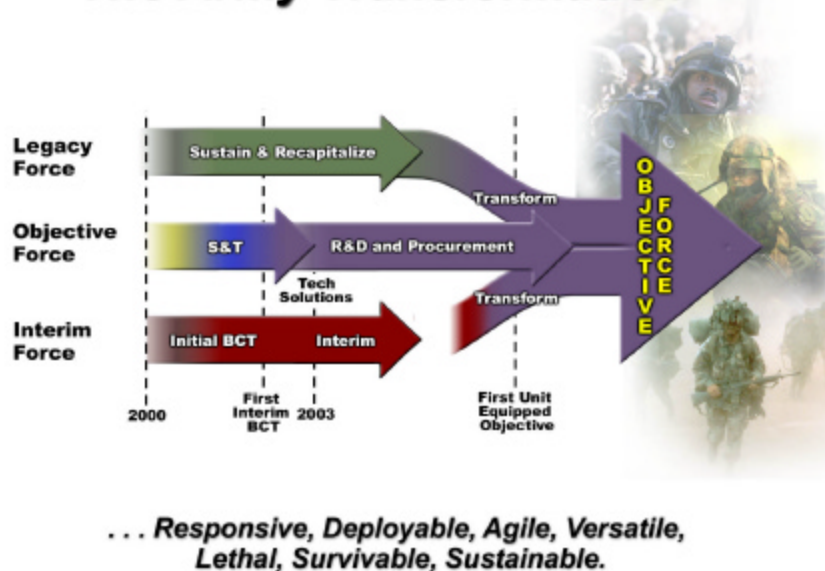
- **Identify, develop, evaluate and tailor emerging Information Technologies.**
- **Facilitate the transition of selected technologies into operational systems.**
- **Perform and Promote System of Systems Integration.**

**To Achieve & Maintain
Information Dominance**



A View of the Future

The Army Transformation



- The Warfighter's demand for more and better C4ISR will continue to grow.
- Commercial C4ISR technology will continue to rapidly advance.
- Our adversaries WILL have the latest technologies.

C3 Technology Insertion

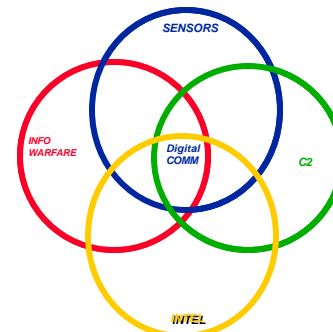


CECOM RDEC Technology Needs



Mr. Robert Doto

**RESEARCH, DEVELOPMENT
& ENGINEERING CENTER**
Dr. Louis C. Marquet - Director



Night Vision Electronic & Sensors

- Thermal Imaging
- Image Intensification
- Charge Couple Devices
- Image Fusion
- Sensor Fusion
- Advanced Optics
- High Density Processors
- Aided Target Recognition
- Lasers/Laser Radar
- Deception
- Countermine Science & Tech

Space & Terrestrial Communications

- Secure On-The-Move Networking
- Reachback/Range Extension
- Unattended Sensors Networking
- Secure Personal Communications
- Antennas
- Information Assurance
- Networked Fires
- Cross Functional Technologies

Command & Control

- Agile Commander
- Logistics C2
- Dismounted Warrior C2
- Interactive Speech
- Natural Language Processing / Translation
- Visual Displays
- Clock / Oscillator
- Power Sources
- Prototype Development & Platform Integration

Intelligence & Information Warfare

- Collection Systems
- Signal Intelligence
- Direction Finder
- Emitter Intercept
- Electronic Intelligence
- Measurement & Signature Intel
- Electronic Warfare
- Radar Technology & Systems
- Information Operations Attack
- Information Processing, Dissemination & Display
- Modeling and Simulation
- C4ISR Penetration Test & Vulnerability

CECOM Bottom Line: THE WARFIGHTER

CECOM RDEC Business Areas

Providing Required Capabilities for Warfighters

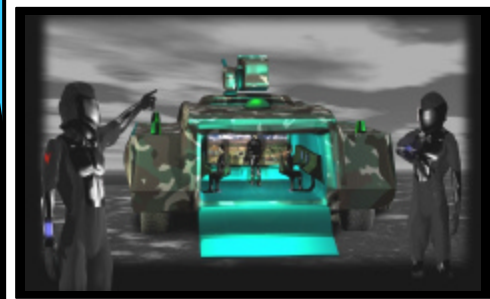
Business Areas

- Survivability
- Own the Night
- Own the Spectrum
- Know the Enemy
- Planning & Decision Making
- Secure Network Communications
- Information Assurance
- Situation Awareness
- Logistics Visibility
- Reduced Fratricide
- C2 Protect/Attack
 - Counter Mine
 - COA Analysis
 - Combat ID
 - Power

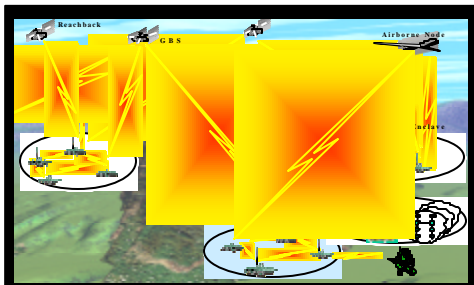
Sensors



Command & Control



Communications

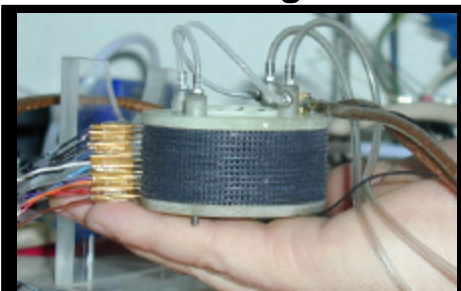


Info Warfare



**C4ISR Capabilities
For the Warfighter**

Power Management



**Totally Integrated
Solutions**



CECOM INDEPENDENT RESEARCH & DEVELOPMENT (IR&D) PROGRAM



Objective:

Promote communication with Industry about CECOM plans and activities and technology needs to assist Industry in implementing their IR&D program.

Promotes effective use of IR&D accomplishments

Mechanisms:

Technology Needs Development

Review of Industry IR&D Project Summaries on DTIC Database

Technical Interchange Meetings

One-on-Ones

Feedback

Process



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DoD/Industry Interaction

DoD

Provide information on DoD's R&D activities & plans, mission needs, & operational requirements

Review IR&D database to identify IR&D of interest

Review IR&D activities and provide feedback to contractors

Industry

Plan, fund, and conduct IR&D

Provide IR&D Project Descriptions

Provide technical information about IR&D

Conferences,
Web Sites, etc.

Summary
Reports

Technical
Interchange
Meetings



C4ISR Acquisition Philosophy

Adopt Commercial off the shelf
Technology / Products

Adopt

Adapt Commercial Technology /
Products When It Cannot Be
Directly Inserted

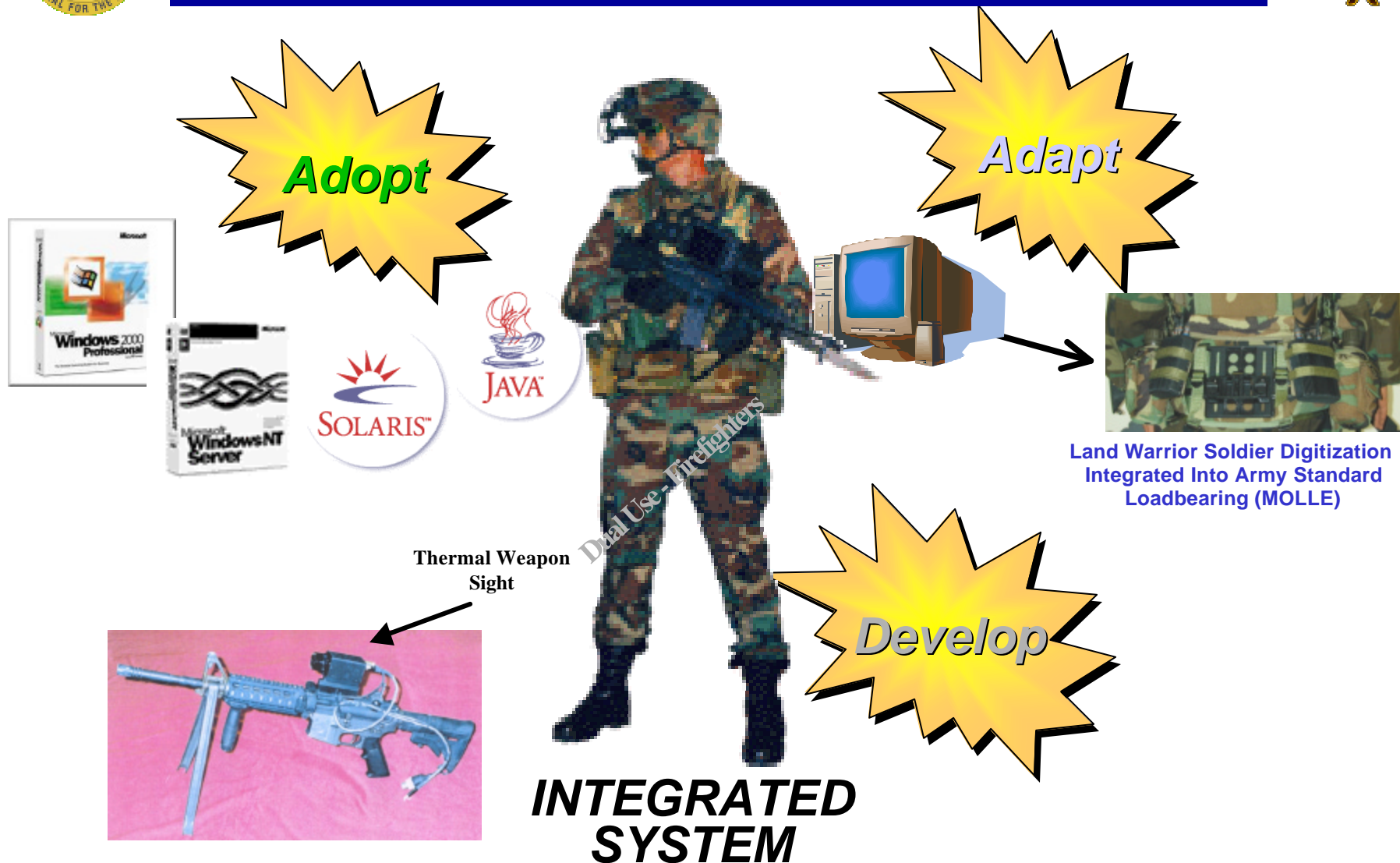
Adapt

Develop Technology in Concert With Other
Services and Agencies for Unique Areas
And Partnerships, Alliances, Teaming

Develop



C4ISR Development - Adopt, Adapt, Develop for Land Warrior





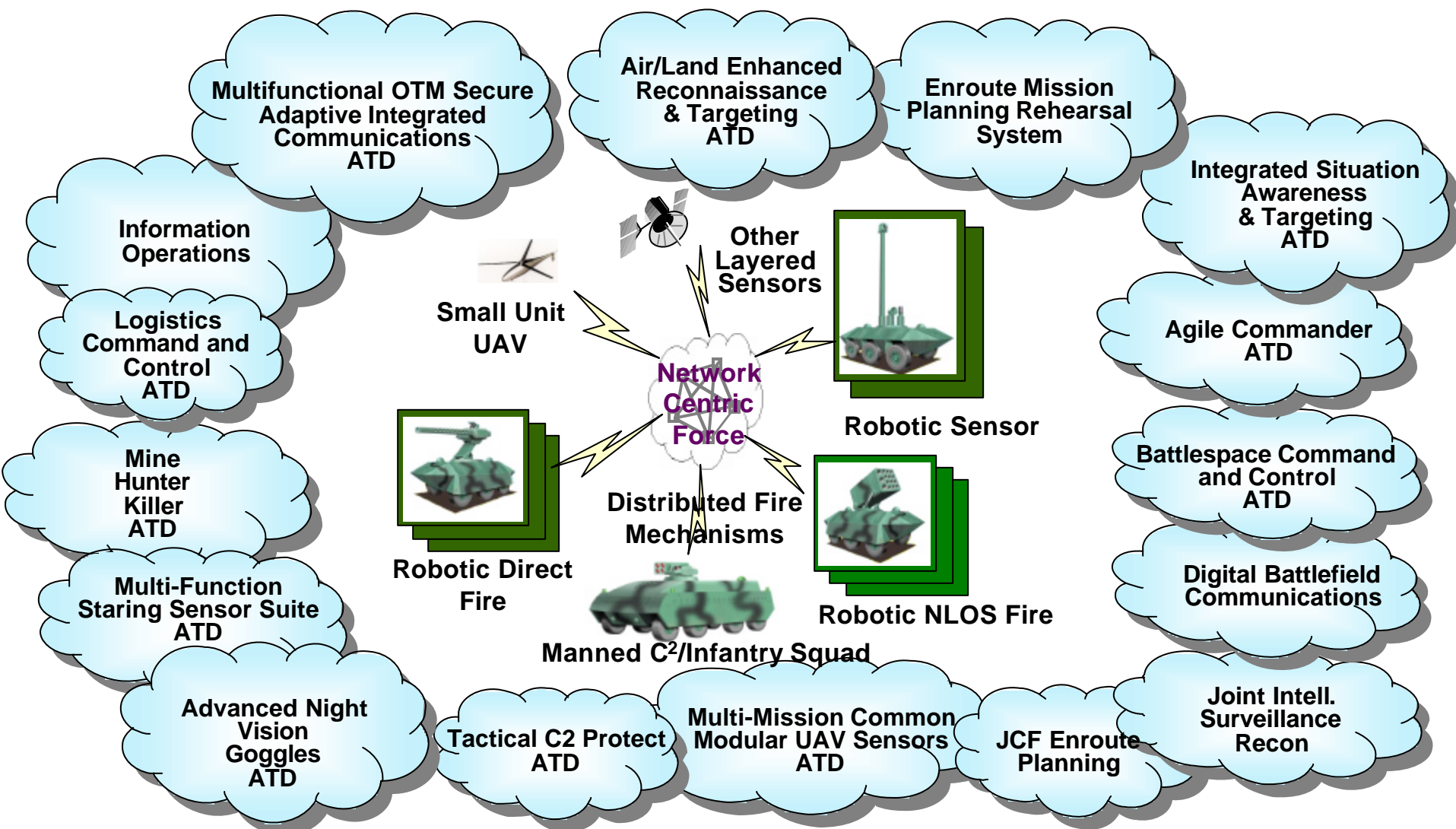
C4ISR Technologies

**Supporting/Enabling
the
Future Combat System/
Objective Force**

CECOM Bottom Line: THE WARFIGHTER



CECOM ATDs and Programs



CECOM Bottom Line: THE WARFIGHTER

Networked Sensors for the Objective Force

Sensors for the Close Fight – BSA+T

... Inside the extended Red Zone

*Organic Low Cost Unmanned Sensors
for the Battlefield Commander*

Networked Sensors for the Objective Force

ATD

Long Range
Surveillance

Mounted Sensor
Hub

Sensors for
Organic
small- UAV

DCGSA
IPB Updates/
GAP ID

Reachback

Scouts

Low Cost UGV
Sensor Payload

Dismounted
Sensor Control

MOUT

Networked Unattended
Ground Sensors

**Distributed Sensors Fill the Battlefield Situational Awareness Gap and Provide BLOS Targeting
– Complement Global Surveillance –**



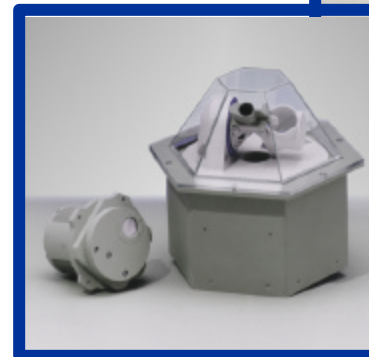
Migration of Aircraft IR Missile Countermeasures and Laser Warning to Objective Force



- Leverages Successful ATIRCM Program



- IR SAM CM
- Laser Warning



- ATGM CM
- Laser Warning

CECOM Bottom Line: THE WARFIGHTER



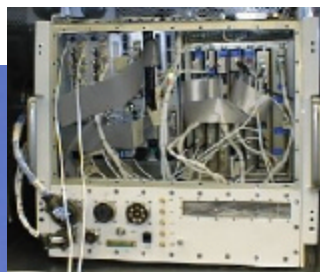
FOPEN Installed on Army RC-12D



Transmitter
115 lb, 1600 w



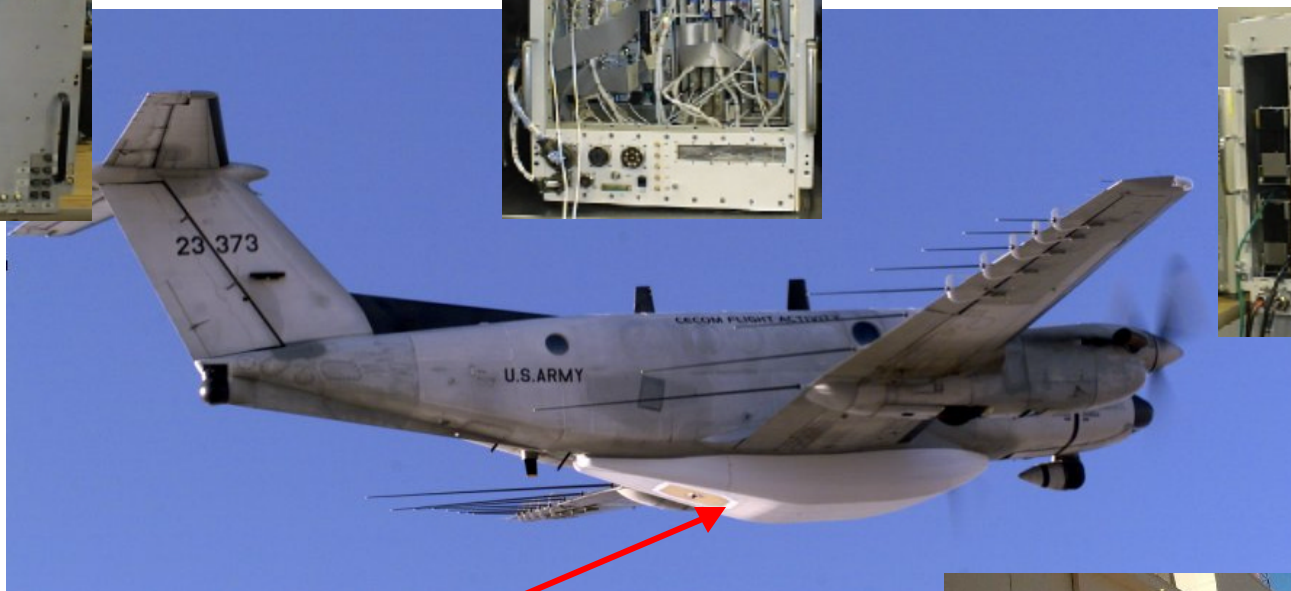
**Receiver /
Exciter**



**Signal/Data
Processor**
185 lb, 3270 w



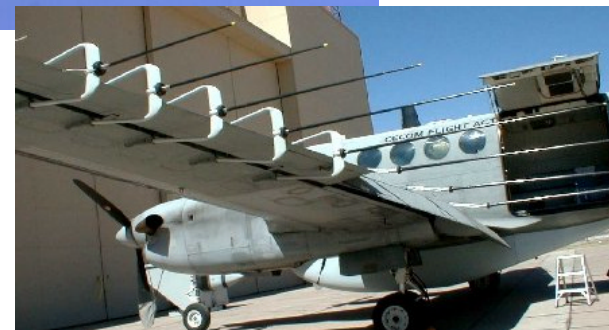
Cables
15 lb



UHF Antenna
84 lb, 20 w



GPS/INS
19 lb, 56 w



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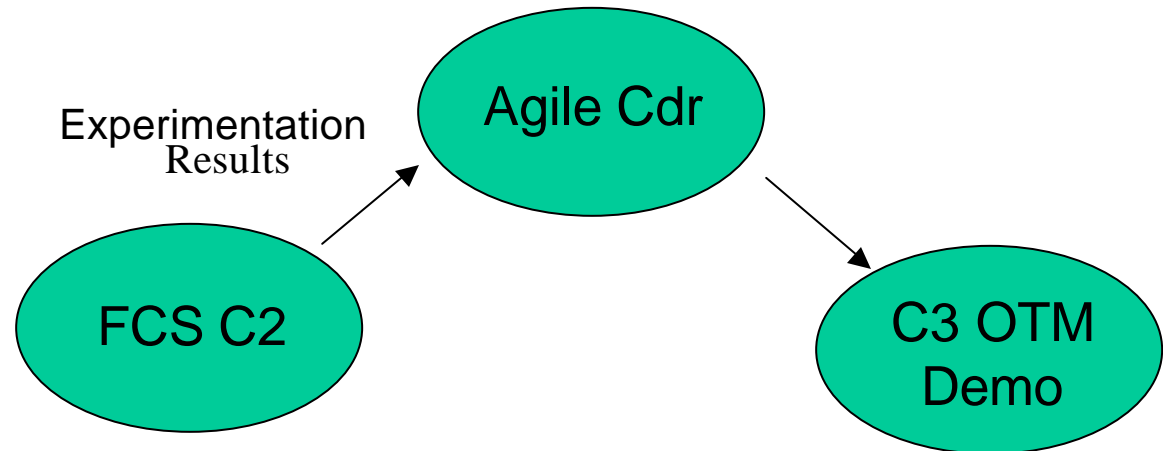
Agile Commander ATD (III.C4.2000.01)



Objective: Demonstrate information technologies enabling *execution-centric*, mobile command and control; aided by continuous battle planning and event control systems; engage in rapidly deployed, split-based operations

Transformation Payoff:

- Fully Integrated C2 System (Unit Cell & Above)
 - Maneuver
 - Logistics
 - Net Sensors/Fires
- B/W Adaptive Computing
- Technology Partners
 - Log C2 ATD
 - Mosaic ATD
 - DARPA FCS C2



Warfighter Payoffs:

- Mobile, integrated, distributed command-centric, near-real-time, semi-autonomous decision support system

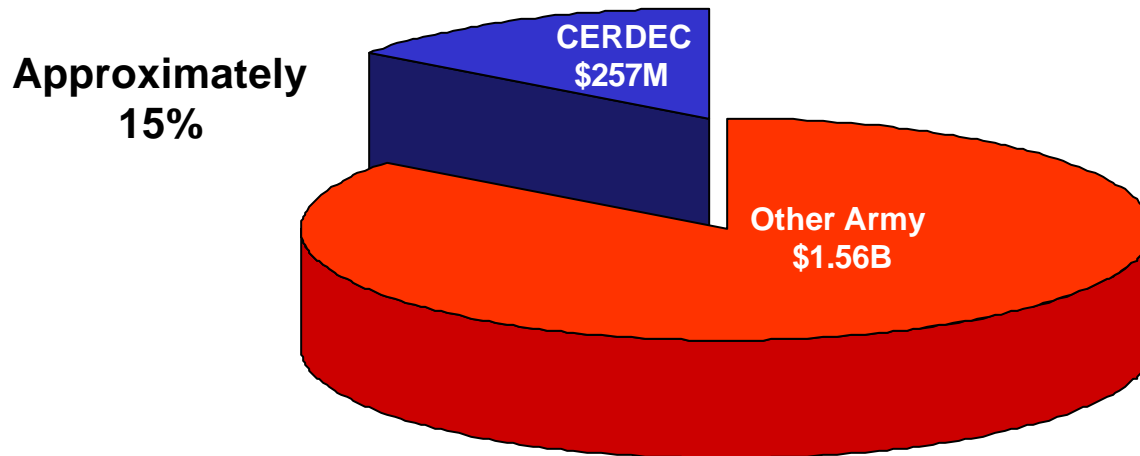
Agile Commander supports the On-the-Move concept



RDEC Tech Base Funding

***C4ISR is beginning to be acknowledged
as a key FCS/OBJ Force enabler***

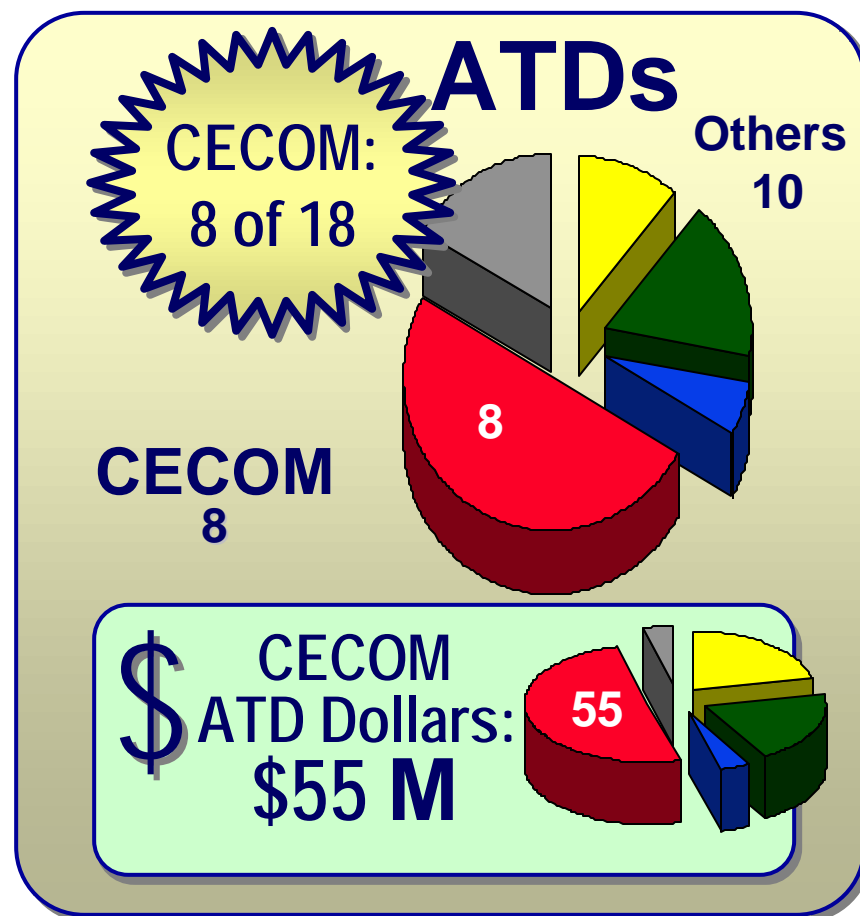
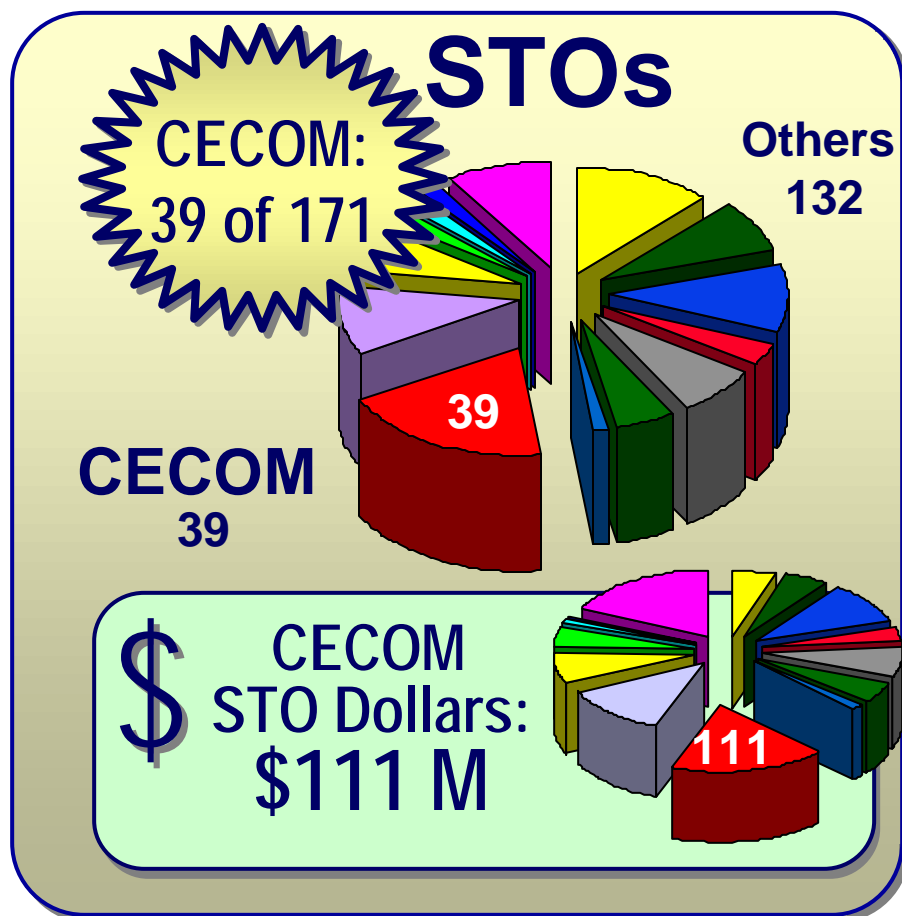
FY- 02 ARMY TOTAL 6.2 & 6.3 = \$1.82B



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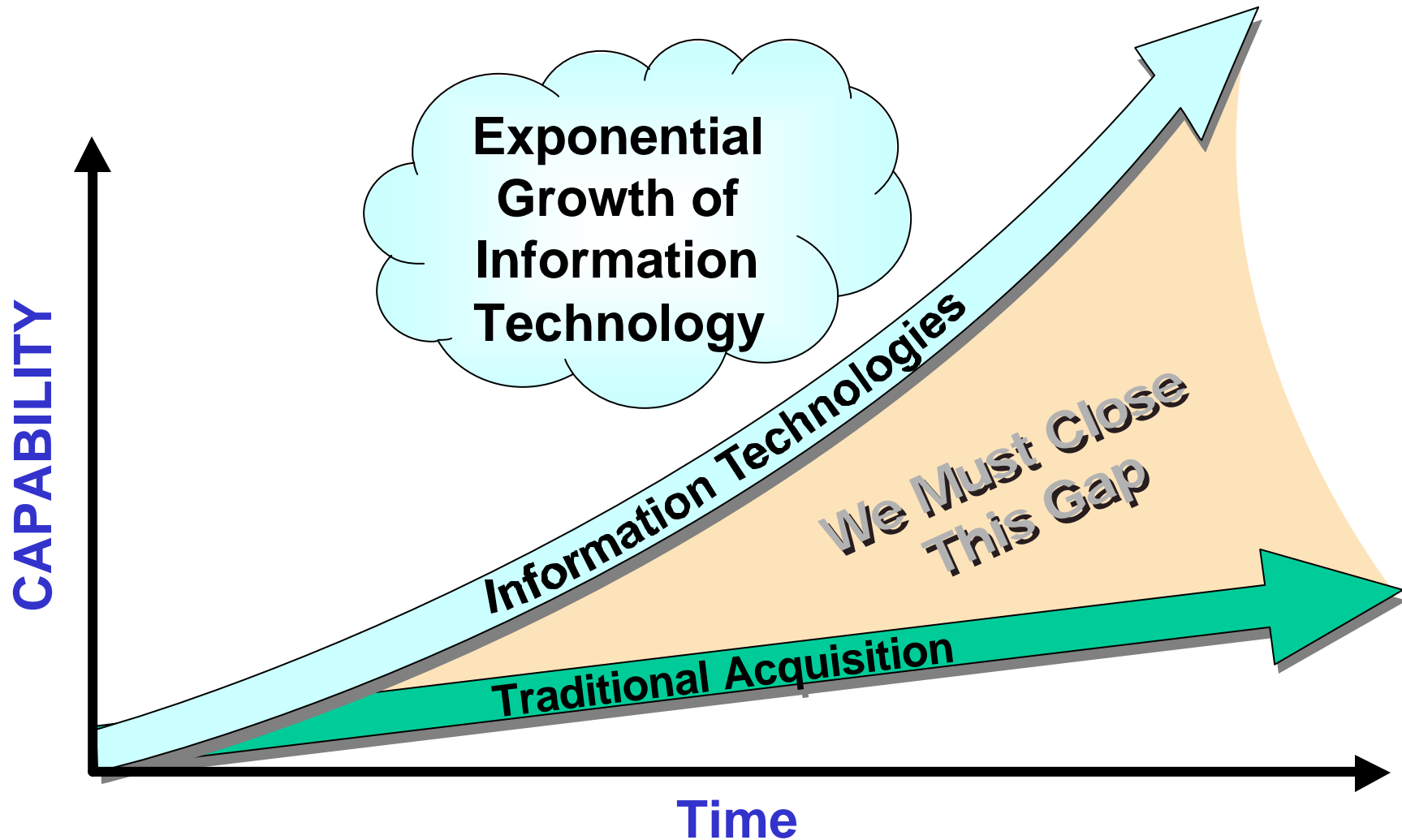
FY02 Defined Army Needs



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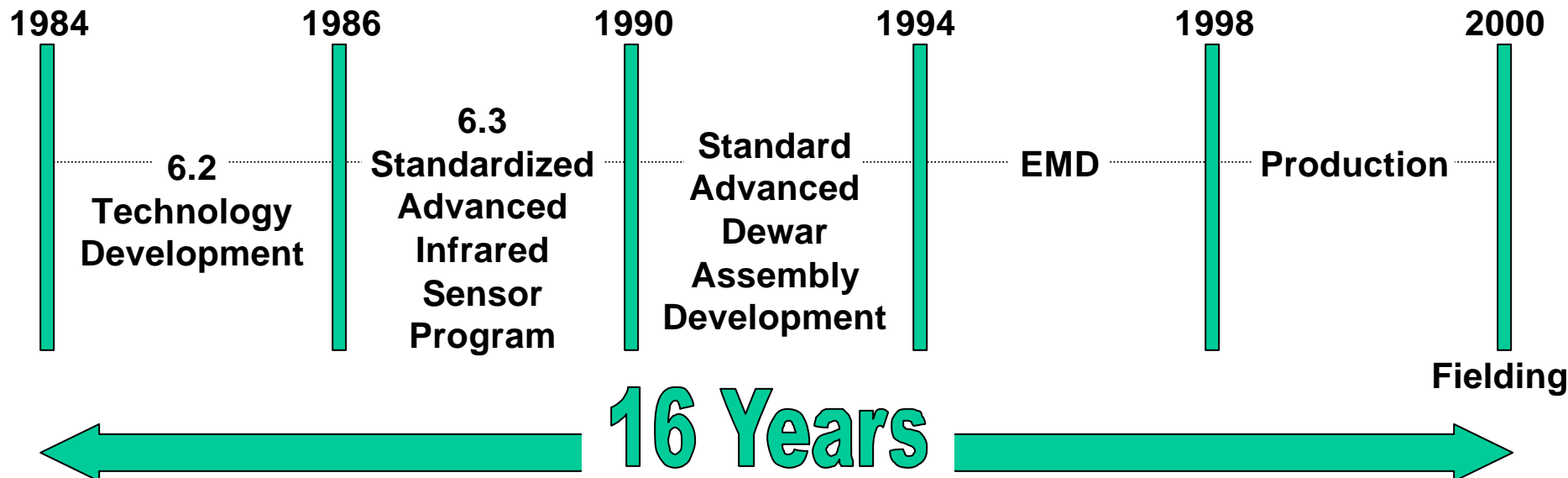
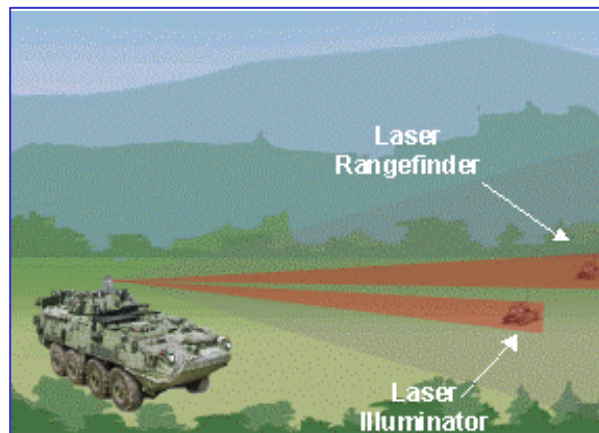
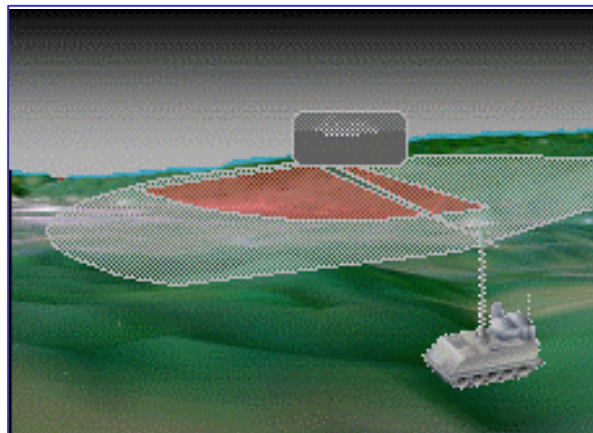
Impact of Information Technology



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2nd Generation FLIR



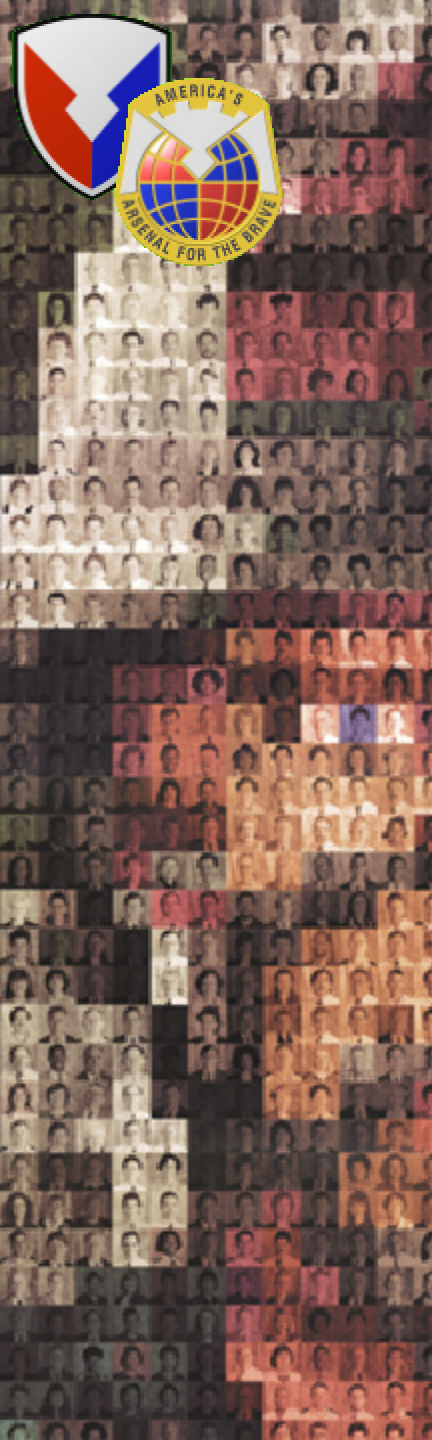
CECOM Bottom Line: THE WARFIGHTER



Recent Examples of Rapid Prototyping



- **CECOM has a proven track record of quickly supporting PM & Customer Requirement**
- **Recent examples include:**
 - **Brigade Subscriber Node (BSN)**
 - **Multi Media Comms System**
 - **Land Warrior**
 - **Enroute Mission Planning & Rehearsal System (EMPRS)**
 - **Signals Intelligence (SIGINT) QRC.**
 - **Trojan Light**
 - **Measurement & Signature Intelligence (MASINT) Vehicle**
 - **Maneuver Control Systems (MCS) Light**



C4ISR is the Key to Battlefield Success



- **C4ISR supports all critical combat operations**
- **C4ISR technologies mature more rapidly than platform/ weapons technologies**
- **Multiple opportunities for technology insertions exist in all three Transformation axes**

**SEE FIRST
DECIDE FIRST
SHOOT FIRST
MOVE FIRST**



The Intent of the Office of Homeland Security

“To take *all* the technology assets that we have in Government and elsewhere and use them in such a way, *fuse* the information in such a way, *share the information* in such a way that we can hopefully prevent future terrorist attacks”

Gov Ridge
Director Homeland Security



How C4ISR Relates to Homeland Security

CECOM Technology & Products

- Airborne Sensors/Intelligence
- Mobile Command and Control
- Emergency Response
 - Search & Rescue
- Perimeter Security
 - Intrusion Detection/Warning
 - Situational Awareness
- Interoperable C4ISR Systems
- Reachback for Information Accessibility



Delivering
The
Right Info
To
Right Place
At
Right Time



CECOM Bottom Line: THE WARFIGHTER



Homeland Security

Threat Detection	Threat Reduction	Crisis/Consequence Management
Airborne Surveillance	Perimeter Defense	1 st Response Teams

↑
Assist

↑
Provide

↑
Augment

**CECOM can Contribute
And
Support the**

Interoperability of Federal and State Civil Agencies

CECOM Bottom Line: THE WARFIGHTER



STATUS

- **Have not been tasked**
- **Do not have any HLS funding**
- **Legal issues need to be resolved**
 - **Military equipment to civilian agencies**
 - **May require new legislation**
- **1st Northeast Region Homeland Security Conference 9 through 13 Sep 02 at Atlantic City, NJ**



RDEC Contract Opportunities Up to \$8.7B



- **RDEC Wide Opportunities (up to \$8.4B)**
 - Small Business Innovation Research
 - Rapid Response II
- **Specific Business Areas Opportunities (up to \$326M)**
 - Intelligence & Information Warfare Dir. (\$30M)
 - Space & Terrestrial Communications Dir. (\$21M)
 - Command & Control Dir. (\$14M)
 - Night Vision & Electronic Sensors Dir. (\$261M)



Small Business Innovation Research

FY02 Program - 50 Topics

website: <http://www.acq.osd.mil/sadbu/sbir>

Advanced Material & Manufacturing

Microelectronics & Photonics

Sensors & Information Processing

High Performance Computing & Simulation

Power & Directed Energy

Chem-Bio

Engineering Sciences

1

3

28

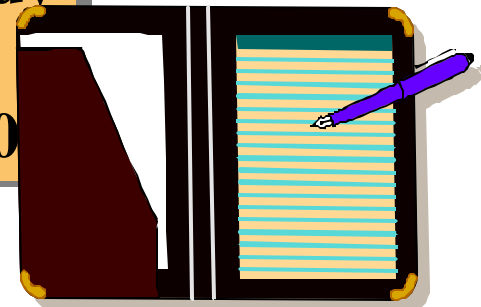
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5

1

8

Phase I
Feasibility Study
6 Months
NTE \$100,000



Phase II

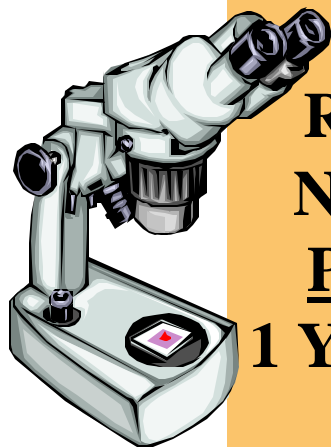
R&D 2 Years

NTE \$750,000

Phase II Plus

1 Year - \$100,000

Matching



Phase III
Commercialization
Funding from
Non-SBIR Source

CECOM Bottom Line: THE WARFIGHTER



Small Business Innovation Research FY2002 Phase II Program



- **30 Topics published in the DoD 01.2 Program Solicitation**
- **245 Phase I Proposals were submitted against topics**
- **46 Phase I Proposals were selected for award – 18% of all proposals submitted**
- **26 Phase II Proposals were awarded this year – 57% of all Phase I proposals awarded**
- **Since inception in 1996, CECOM has won 5 of 6 annual Phase II Quality Awards**



Phase III Success Story

Virtual Breaker Box

Custom Manufacturing and Engineering, Inc.



Impact:

- 1 Unit delivered, 8 units ordered, \$32K in revenue, potential for 1000's to be used across DoD
- Two patents in process
- \$2.25M in DoD research funding
- \$35K in non-DoD research funding

- *Through the use of "smart" circuits and outlets*
 - Delivers advanced energy management
 - Control for shelters and vehicles
- Applications
 - FCS
 - Multi-functional, low-power systems in Land Warrior
 - Unattended ground sensor networks
- Commercial applications
 - Yachts
 - RVs
 - Industrial buildings



Small Business Innovation Research (SBIR) Program Opportunities



- **OBJECTIVE:** To stimulate technological innovation, strengthen role of small business in DoD R&D needs, foster & encourage participation by minority/disadvantaged persons, increase commercial application of DoD supported research in R&D results.
- **CONTRACT TYPE:** Firm Fixed Price (FFP)
- **ESTIMATED VALUE:** Up to \$5.3M
- **KEY MILESTONES:** (Phase I)
 - Pre-Solicitation 1 May 02
 - Solicitation Opens 1 Jul 02
 - Solicitation Closes 14 Aug 02
 - Contract Award 13 Dec 02
- **PROGRAM CONTACT:** Suzanne Weeks, (732) 427-3275
- **ACQUISITION CONTACT:** Rick Kolarsick, (732) 532-4246

**Phase I
Opportunities
Now
Available**



RAPID RESPONSE II



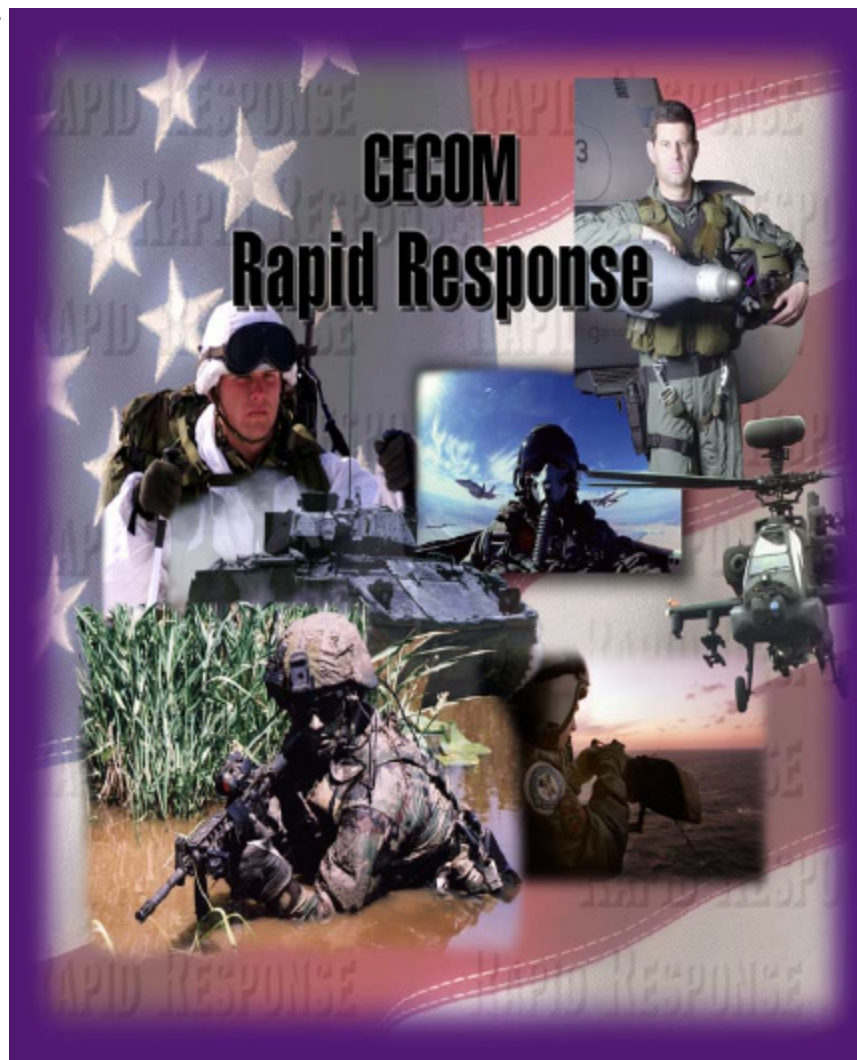
CECOM
RAPID RESPONSE PROJECT OFFICE
FORT MONMOUTH, NJ

**R2 STATEMENT OF WORK
AND CAPABILITIES**

- Broad Scope to Support All Platforms
- Technology Insertion
- Systems Integration
- Fabrication and Prototyping
- Testing
- Certification
- Studies and Analyses
- Technical Data Management
- Systems Installation
- Logistics Support Service
- Training
- Acquisition Support

CUSTOMERS

- US ARMY
- US AIR FORCE
- US NAVY
- US MARINE CORPS
- US COAST GUARD
- NASA
- Defense Logistics Agency
- FMS
- State Department
- Available to All Federal Agencies



CECOM Bottom Line: THE WARFIGHTER



CECOM
RAPID RESPONSE PROJECT OFFICE
FORT MONMOUTH, NJ

**R2 STREAMLINED
ACQUISITION SOLUTIONS**

- 19 Day Competitive Award Process
- Step-By-Step Technical/Contract/ Budget Assistance
- Three Multiple Award Task Order Contracts
- Flexible Time and Materials and Firm-Fixed-Price Orders
- Negotiated Labor Rates for Prime and Subcontractors
- Wide-Ranging Labor Categories
- Low 1% Management Fee

**R2 EXPERIENCED
DEDICATED STAFF**

- Engineers
- Acquisition Professionals
- Computer Scientists
- Legal Representatives
- Small Business Specialists
- Budget Analysts
- Security Advisor



RAPID RESPONSE II



- **Recompete teams for Rapid Response to Critical Systems Requirements Contracts (R2CSR).**
- **Current 3 contracts expire in 07/03.**
- **Customers require greater period of performance.**
- **Awarded over 514 delivery orders for varied federal customers since 07/98.**
- **Value of Awards to Date:**
 - **Total: ~ \$1.45 Billion**
 - **Small Business: ~ \$370 Million**



RAPID RESPONSE II

- **OBJECTIVE:** Provide federal platform managers with a rapid means for acquiring integration, modification, testing, maintenance, logistics, etc. support.
- **CONTRACT TYPE:** Performance-Based Indefinite Delivery/Indefinite Quantity (ID/IQ) Time & Materials (T&M) / Firm Fixed Price (FFP).
- **ESTIMATED VALUE:** \$2.8B Max Per Contract (\$8.4B est. total)
(8 Years Including Options)
Potential for up to 7 contracts
- **KEY MILESTONES:**

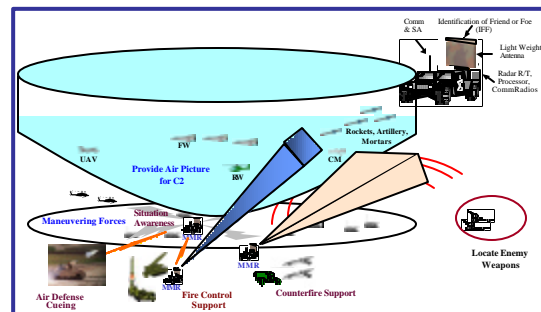
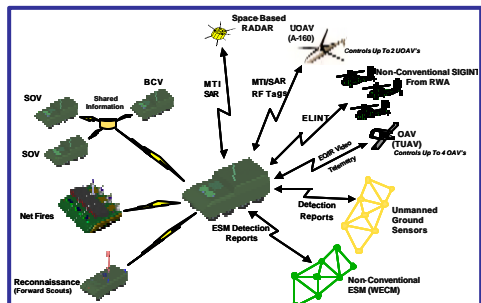
Release RFP	3Q FY02
Multiple Awards	4Q FY02
- **TECHNICAL CONTACT:** Stanley Tylecki (732) 427-4348
- **ACQUISITION CONTACT:** Sylvia Mielke (732) 427-1519
- **SOLICITATION NO:** DAAB07-02-R-G401



Intelligence & Information Warfare Dir. Key Programs



ISR



FOPEN

Info Ops

Multi-Mission Radar

RADAR

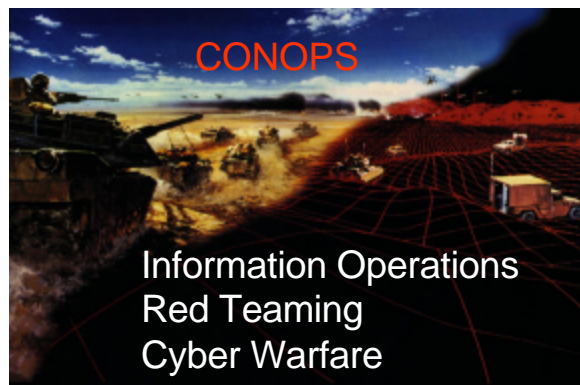


MASINT

ACS



INTEL



LCMR



SAR/MTI

MYSTIC

TUAV

Future Capability



HSI

Electronic Combat

Area Protection



Combat Identification



Platform Protection





I2WD BAA - 11 Research Interest Topics

- **Collect - Collection Systems -- General**
- **Collect - Signals Intelligence (SIGINT)**
- **Collect - Direction Finding (DF) Development and Enhancements**
- **Collect - Emitter Intercept Techniques**
- **Collect - Electronic Intelligence (ELINT)**
- **Collect - Measurement & Signature Intelligence (MASINT)**
- **Electronic Warfare (EW)**
- **Information Operations (IO) -- Attack**
- **Information Processing, Dissemination and Display**
- **Modeling and Simulation**
- **Command and Control Protect and C4-ISR Penetration Testing and Vulnerability Analyses**



Topic Details

- **Topic title: *Collect – Collection Systems -- General***
 - Requirements
 - Technology forecast through 2010
 - Objectives
 - Revolutionary ISR capabilities required
- **Topic title: *Collect – Signals Intelligence (SIGINT)***
 - Future signals environment
 - Geographical considerations
 - Sensor requirements



Topic Details

- ***Topic title: Collect – Direction Finding (DF) Development and Enhancements***
 - Super-resolution DF algorithms
 - Antenna array design
 - System calibration and electromagnetic modeling
 - RF interference
 - Critical component development
 - Real-time signal processing in embedded computers
 - Wide-band / LPI signal exploitation techniques
 - Issues peculiar to HFDF



Topic Details

- **Topic Title: Collect – *Emitter Intercept Techniques***
 - Advanced receivers and receiving techniques
 - TTPs for automated intercept, processing and exploitation of Low Probability of Intercept (LPI), Low Probability of Exploitation (LPE) signals
 - Methods and techniques for improving the intercept range (distance) of ground based and low-flying intercept systems
 - Improvements in man-machine interfaces for tactical intercept systems
 - Recognition, demodulation, and decoding of digital data



Topic Details

- **Topic Title: *Collect – Electronic Intelligence (ELINT)***
 - Sub-topic #1 - 6U VME ELINT Digital IF Receivers, Algorithms and Processors
 - Sub-topic #2 - Digital Broadband Cross-Ambiguity-Function Processor for ELINT Geolocation
- **Topic title: *Collect – Measurement and Signature Intelligence (MASINT)***
 - Sub-topic #1 – Combat Identification
 - Sub-topic #2 – Moving Target Indicator (MTI) / Synthetic Aperture RADAR (SAR)
 - Sub-topic #3 – System of Systems Integration of Delivery, Processing and Dissemination Systems



Topic Details

- **Topic title: *Electronic Warfare (EW)***
 - Sub-topic #1 -- Communications Electronic Attack
 - Sub-topic #2 -- Infrared Countermeasures (IRCM)
 - Sub-topic #3 -- Multi-Spectral EO / IR / UV Sensors for Warning / Countermeasure
 - Sub-topic #4 -- Self Protection / Avionics Technology
 - Sub-topic #5 -- RADAR Countermeasures, Warning and Deception
 - Sub-topic #6 -- Advanced RADAR Countermeasures
 - Sub-topic #7 -- Electronic Deception & Advanced Signature Management



Topic Details

- **Topic title: *Information Operations (IO) -- Attack***
 - **C4-ISR Exploitation and Attack (Counter C4-ISR) Requirements:**
 - **Sub-topic #1: Real Time, Stealthy, Logical Network Access, Discovery, Exploitation and Countermeasures– non-cooperative**
 - **Sub-topic #2: Real Time, Stealthy, RF Access, Communications and Non-Communications Network Discovery, Exploitation and Countermeasures – non-cooperative**
 - **Sub-topic #3: Real Time, Stealthy, Active Protection and Defense of U.S. Army Tactical Information Networks; Exploitation and Countermeasures – cooperative**



Topic Details

- **Topic title: *Information Processing, Dissemination and Display***
 - Sub-topic #1 – Information Processing and Fusion
 - Sub-topic #2 – Multi-Sensor Fusion Automatic Target Recognition (ATR)
- **Topic title: *Modeling and Simulation (M&S) Initiatives***
 - Electronic Warfare Systems Modeling and Simulation
 - Communications Intelligence System Simulation Collection Used for Opposing Wireless Communications Systems
 - IEW / IO Mission Planner



Topic Details

- **Topic title:** *Command and Control Protect and C4-ISR Penetration Testing and Vulnerability Analyses*
 - Vulnerabilities of U.S. C2 or C4-ISR systems or their components shall be classified SECRET.
 - Vulnerability assessments, penetration testing, exploitation, countermeasure development, or the development of tactics, techniques and procedures, having a focus that is Threat / adversary-based, shall not be undertaken under this topic.
 - No classified materials, software, tools, tactics, techniques or procedures shall be developed under this topic.
 - Classified tools for Information Operations shall be developed under the IO Attack topic and sub-topics of this BAA.
 - Contractors working under this topic shall not have access to classified tools.



I2WD BAA 2000

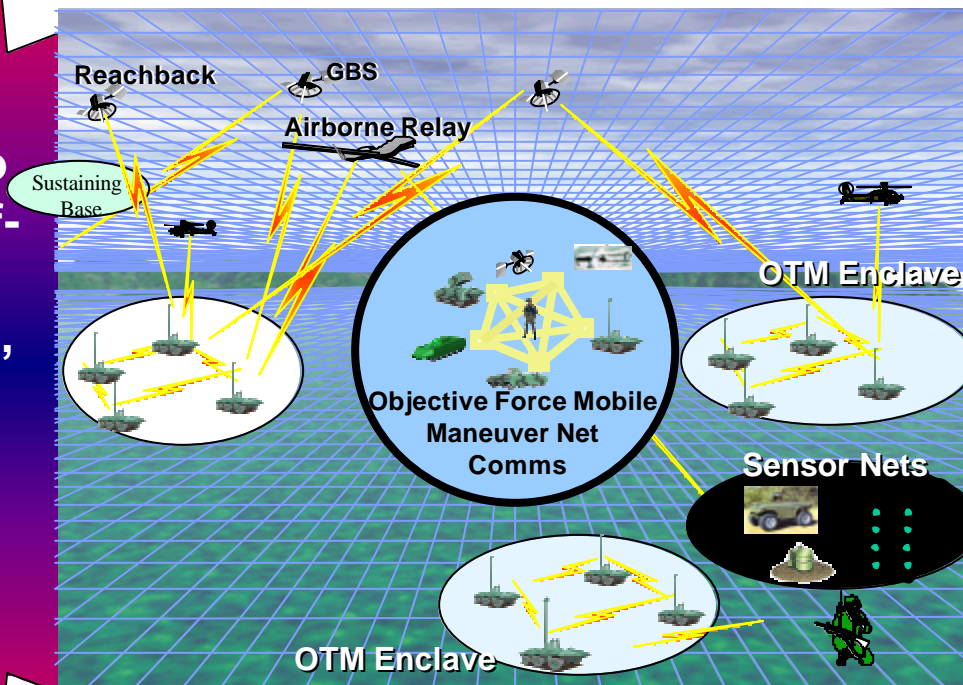


- **OBJECTIVE:** Open solicitation wherein special consideration shall be given to R&D proposals that exhibit revolutionary and innovative solutions that satisfy Army requirements in the areas of Information Superiority and Information Dominance based upon available funding.
- **CONTRACT TYPE:** Cost Plus Fixed Fee (CPFF)
- **ESTIMATED VALUE:** Total Awards \$25M-\$30M
Individual Awards \$500K - \$20M
- **KEY MILESTONES:** Various annual awards (FY03-FY05)
Open proposal submission accepted at anytime throughout life of BAA
- **TECHNICAL CONTACT:** Mary Wills, (732) 427-7206
- **ACQUISITION CONTACT:** Mary Paterno-Mihalko, (732) 532-3992
- **SOLICITATION # :** DAAB07-00-R-K501



Multifunctional On-the-Move Secure Adaptive Integrated Communications (MOSAIC)

Adaptive Network Protocols to Support Self-Initializing, Self-Healing, Adaptive, Mobile Networks while addressing security



Bandwidth Management

Security Framework

Communications Support for Increased Operational Flexibility

CECOM Bottom Line: THE WARFIGHTER



Multifunctional On-the-Move Secure Adaptive Integrated Communications (MOSAIC)



- **Major Focus Areas:**
 - **Bandwidth Management**
 - **Adaptive Network Protocols**
 - **Integration of Commercial and DoD developed wireless technologies**
- **Challenge:**
 - **Provide assured, wireless, network that works in diverse, complex terrain**



Multifunctional On-the-Move Secure Adaptive Integrated Communications (MOSAIC)



- **Barriers:**
 - Days to preplan & configure network
 - Limited bandwidth for assured network access, services, & speed of delivery
 - Complex, dynamic, network management
 - Continuous coverage
- **Solutions:**
 - Minutes to configure network via self-organizing Ad Hoc protocols
 - Efficient bandwidth utilization via adaptive algorithms
 - Simplified automated network ops using intelligent distributed agents
 - Horizontal and vertical network handoff (including UAV Comms payload)



Multifunctional On-the-Move Secure Adaptive Integrated Communications (MOSAIC)



- **OBJECTIVE:** To provide mobile communications and networking technologies to support the Objective Force/Future Combat Systems and Battle Command infrastructure mobility
- **CONTRACT TYPE:** Combination of Other Transactions, Cost Plus Fixed Fee, (BAA)
- **ESTIMATED VALUE:** \$3 - 5M over 2 years
- **KEY MILESTONES:**
 - **BAA Released:** 3QFY00
 - **Multiple Awards** 1QFY03 & 2QFY04
(Suggested proposal submission NLT Aug 02 and Nov 03 respectively)
 - **Final Demonstration** FY04
- **TECHNICAL CONTACT:** Gary Blohm, (732) 427-4277
- **ACQUISITION CONTACT:** Frederick Kolarsick, (732) 532-4346
- **SOLICITATION NO:** DAAB07-00-R-L575



Advanced Antennas



WIDEBAND GAP-FILLER

MILSTAR

GLOBAL BROADCAST
SATELLITE

- OTM MULTIMISSION
- HIGH DATA RATE

OTM MULTIBEAM
PHASED ARRAY

RECEIVE AND
TRANSMIT ARRAYS

BODY BORNE / LOW
PROFILE ANTENNAS

- REDUCED VISUAL SIGNATURE
- ENHANCED SURVIVABILITY /
HORIZONTAL TECH INTEGRATION

• JTRS INTEGRATION

JOINT TACTICAL RADIO
SYSTEM OTM MULTIBAND
ANTENNA

JTRS | Wideband Phased Array | Multiplexer

• REDUCED
LOGISTICS

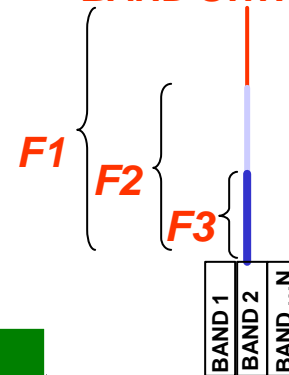
- REDUCED COSITE
- GREATER GAIN

NEAR FIELD ANTENNA /
PLATFORM MODELING



- REDUCED ANTENNA
PATTERN DISTORTION

RECONFIGURABLE
VHF & MULTIBAND
BAND SWITCHED



RADIO
RF

RADIO
CONTROL

CECOM Bottom Line: THE WARFIGHTER



Advanced Antennas

- **Major Focus Areas:**
 - Multiband, Multibeam phased-array antennas
 - Re-configurable band-switched antennas
 - Multiband antennas for ground and airborne JTRS radio applications
 - Body borne & low-profile antennas for soldier and Vehicular platforms
 - Modeling and Simulation to validate antenna design efforts
- **Challenge:**
 - Develop antenna products that provide mobility, robustness, interference rejection and form factors required for Objective Force Communications



Advanced Antennas

- **Barriers:**
 - Reducing antenna size while maintaining bandwidth
 - Improving G/T to achieve higher data rates
 - Maintaining uniform antenna VSWR and gain across band
 - Reducing interference
- **Solutions:**
 - Apply thin film ferroelectric and MEMS technologies
 - Develop slow wave spiral antenna technologies
 - Develop reconfigurable band switching technologies



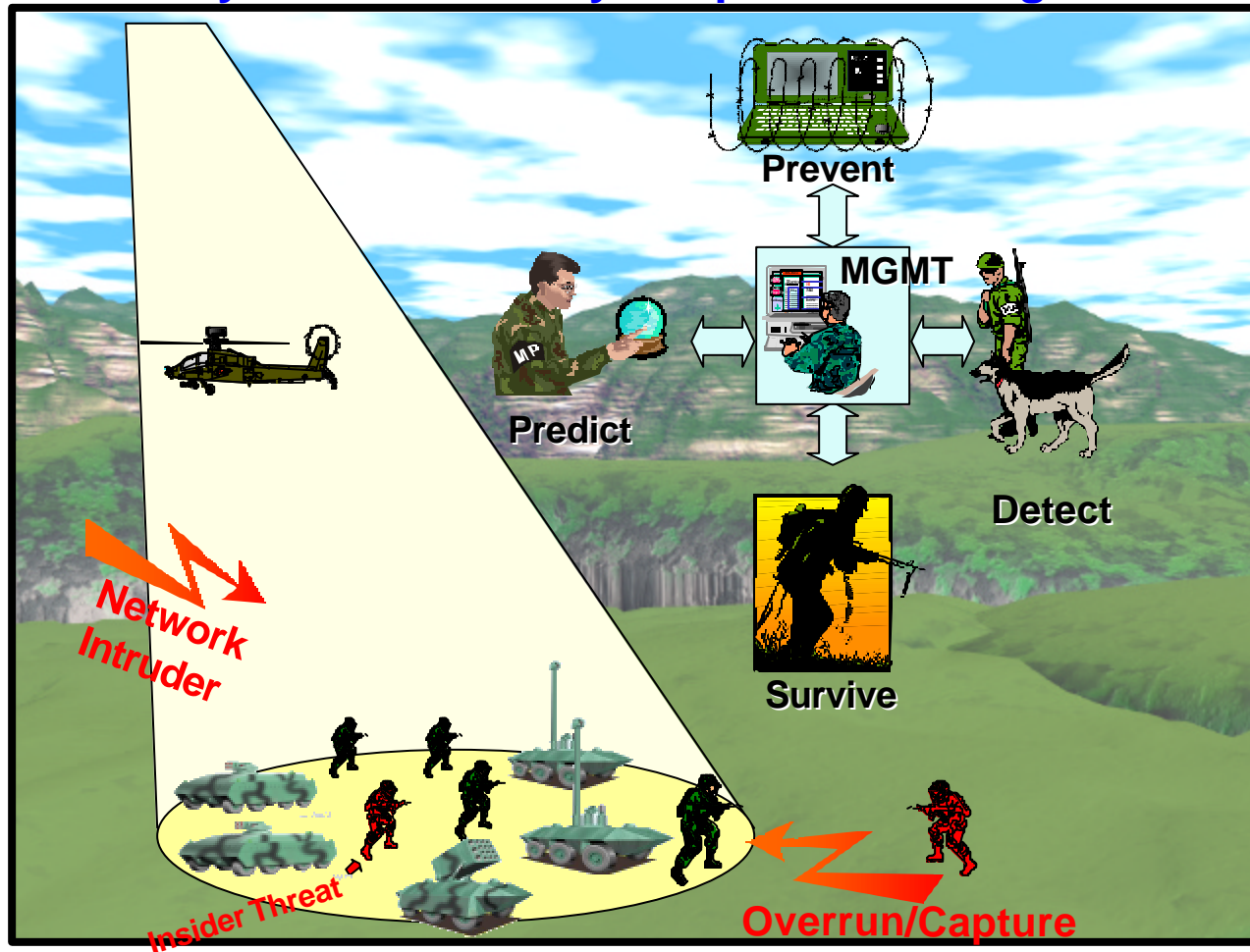
Advanced Antennas

- **OBJECTIVE:** To develop a family of OTM, high gain, low profile antennas and subordinate products covering the 30 MHz to 44 GHz frequency range
- **CONTRACT TYPE:** Combination of Other Transactions, Cost Plus Fixed Fee, Firm Fixed Price, (BAA)
- **ESTIMATED VALUE:** \$8 - \$13M, 5 year effort
- **KEY MILESTONES:**
 - BAA Released 3QFY00
 - Multiple Awards 2QFY03, 2QFY04
(Suggested proposal submission NLT Nov 02 and Nov 03 respectively)
 - Prototype Delivery 2QFY03, 2QFY04, 2QFY05, 4QFY06
- **TECHNICAL CONTACT:** Steve Goodall (732) 532-0445
- **ACQUISITION CONTACT:** Virginia Knight (732) 532-4348
- **SOLICITATION NO:** DAAB07-00-R-L575



Tactical Information Assurance Technology

Objective: Adapt and Develop Critical Information Assurance Component to Insure Network and System Availability Despite Increasing Threats



CECOM Bottom Line: THE WARFIGHTER



Tactical Information Assurance Technology



- **Major Focus Areas:**
 - **Advanced Network Access Control**
 - **Wireless Intrusion Detection**
 - **Synchronized Security Management**
 - **Tactical Public Key Infrastructure**
 - **Mobile Code Authentication**
- **Challenge:**
 - **Inability to protect the Wireless Tactical Networks of the Future Combat Systems and the Objective Force from increasingly sophisticated, organized nation state threats**



Tactical Information Assurance Technology



- **Barriers:**
 - COTS/GOTS products and developments not compatible with Wireless Tactical Networks
 - Information Assurance solutions do not exist for Tactical Wireless
 - Lack of integrated Automated Security Management Tools
 - Ad Hoc Network complicates authentication
- **Solutions:**
 - Smart Adaptation of commercial and Government based tools
 - Adopt, Adapt and Develop advanced tactical software protection tools and techniques



Tactical Information Assurance Technology

- **OBJECTIVE:** To advance the state of the art in wireless tactical protect tools and architecture concepts to enhance the security of the Objective Force
- **CONTRACT TYPE:** Combination of Other Transactions, Cost Plus Fixed Fee (BAA)
- **ESTIMATED VALUE:** \$1- 3M, FY03-07
- **KEY MILESTONES:**
 - BAA Released 3QFY00
 - Call for White Papers 3QFY02 (22 May)
 - White Papers Due 3QFY02 (28 June)
 - BAA Proposals 4QFY02
 - Multiple BAA Awards 1QFY03
- **TECHNICAL CONTACT:** Robert Schenk (732) 427-2069
- **ACQUISITION CONTACT:** Frederick Kolarsick (732) 532-4346
- **SOLICITATION NO:** DAAB07-00-R-L575



Agile Commander Advanced Technology Demonstration

Execution-Centric Decision Support



**Mobile
Distributed
Collaborative**



CECOM Bottom Line: THE WARFIGHTER



Agile Commander Advanced Technology Demonstration



- **Goals**

- Simplify and reduce the time required to plan operations
- Ensure that relevant information is available to warfighters in a timely and common-sense manner
- Create or mature C2 systems to aid the commander and his staff to conduct operations on-the-move

- **Program Characteristics**

- Split-based, distributed battle command that sustains mobile, synchronized and coordinated operations from dispersed locations
- Collaboration, visualization, and semi-automated Course of Action (COA) tools
- Knowledge management and data warehousing
- Software intelligent agents for execution monitoring
- Integration of maneuver and logistics planning



Agile Commander Advanced Technology Demonstration

- **OBJECTIVE:** Technical Research & Development support to the Agile Commander ATD in the areas of:
 - Course of Action (COA) / Continuous Planning
 - Intelligent Agents
 - Interactive Information Visualization
 - Knowledge Management and Warehousing
 - Modeling & Simulation
 - Adaptive Applications
- **CONTRACT TYPE:** Anticipate cost-plus-fixed-fee (offers may propose alternate contract types), BAA
- **ESTIMATED VALUE:** Individual awards from \$25K to \$3M
Total Estimated Value - \$14M
- **KEY MILESTONES:**

Solicitation Published:	8 Aug 00
Proposal Deadline for FY02 Award:	15 May 02
Solicitation Closes:	30 Sep 03
- **TECHNICAL CONTACT:** Varies by topic area; identified in the BAA
- **ACQUISITION CONTACT:** Mr. Andrew Dellomo (732) 532-3569
- **SOLICITATION #:** DAAB07-00-R-L613

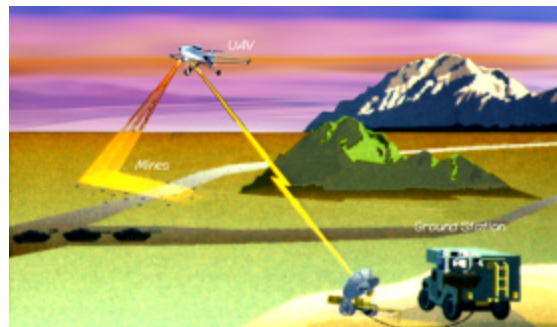


High Tech Omnibus Contract

Night Vision & Electronic Sensors Dir. (NVESD)



False Alarm Reduction



Lightweight Airborne Multispectral
Minefield Detection



Microfactory



Paint the Night
Simulations

Mine Detection

Fabrication and Testing

Multisensor Fusion Processor



320x240 Uncooled
 μ FLIRs

Modeling and Simulation

Sensor Development

CECOM Bottom Line: THE WARFIGHTER



High Tech Omnibus Contract

Night Vision & Electronic Sensors Dir. (NVESD)



- To provide technical, non-personal services for one year with four option years
- Includes R&D for night vision, electronic sensors, and mine detection and systems
- Requires scientists, engineers, computer specialists and other technical experts
- Supports design, fabrication, lab and field testing, and modeling and simulation
- Requires on-site management at Ft. Belvoir, VA



High Tech Omnibus Contract

Night Vision & Electronic Sensors Dir. (NVESD)



- The two High Tech Omnibus Contractors may compete with each other for numerous task orders as needs arise.
- Funding levels achieved for each contractor depend on NVESD needs, funding available, and on number of winning task order bids.
- Contract includes materials purchases, management of subcontractors, and execution of R&D tasks both on-site at Ft. Belvoir, VA, and off-site to complete specific task orders.
- Requires clearances for all on-site personnel and off-site technical employees.



High Tech Omnibus Contract NVESD

- **OBJECTIVE:** Services contract for sensor technologies and prototypes
- **CONTRACT TYPE:** Indefinite del/indefinite quantity, time & materials
- **ESTIMATED VALUE:** Dual award of \$15-\$25M each with 4 option years at \$15-\$25M per year (total \$250M)
- **KEY MILESTONES:** Solicitation 4QFY02
Award 1QFY03
- **TECHNICAL CONTACT:** Susie McDowell 703-704-1252
- **ACQUISITION CONTACT:** Rick Forsberg 732-532-3547
- **SOLICITATION # or RFQ #:** TBD



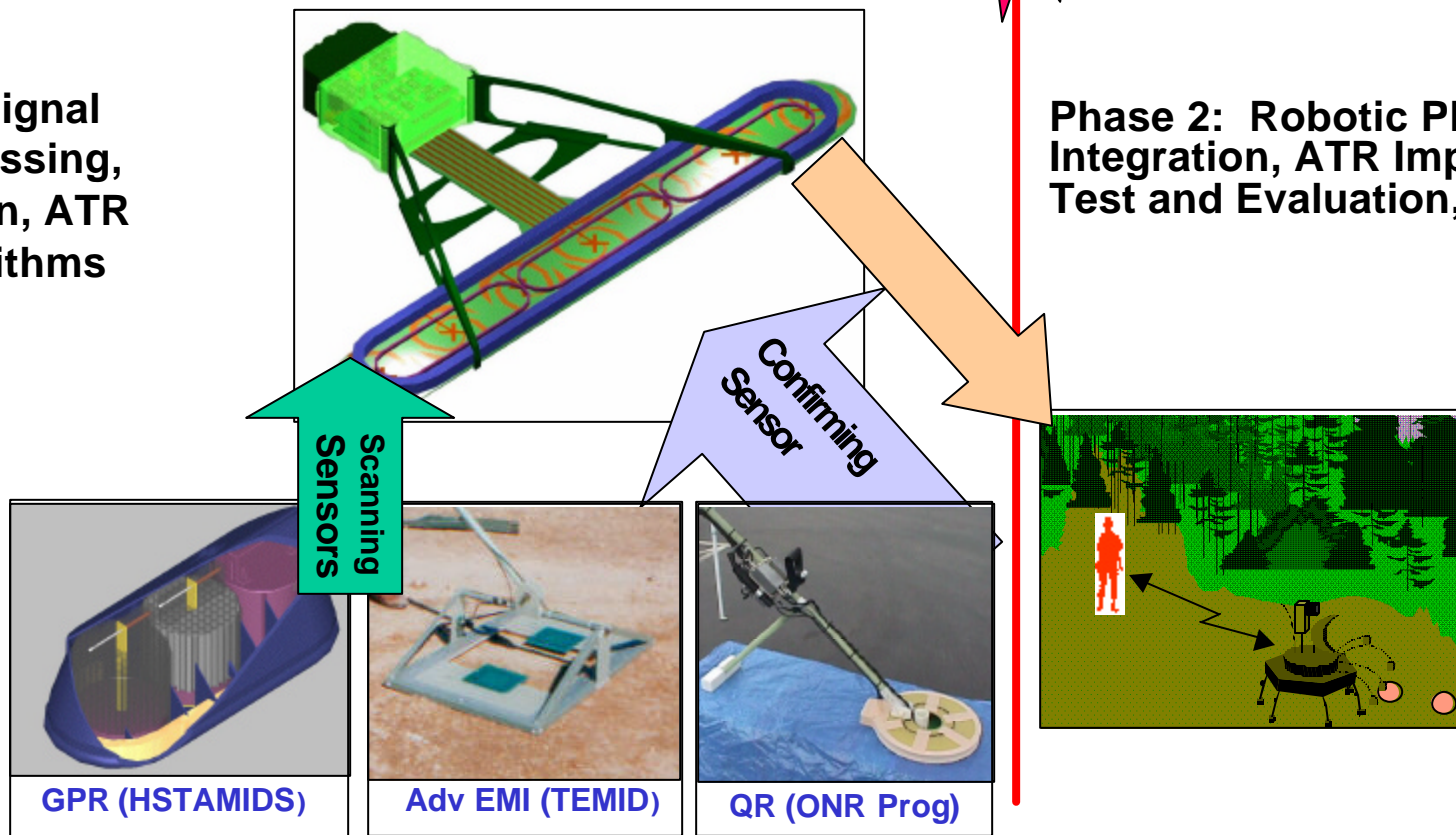
Autonomous Mine Detection Sensors

Phase 1: Autonomous Mine Detection Sensors, FY02-04

Select Platform

Adv Signal Processing, Fusion, ATR Algorithms

Phase 2: Robotic Platform Integration, ATR Implementation, Test and Evaluation, FY04-07



CECOM Bottom Line: THE WARFIGHTER



Autonomous Mine Detection Sensors



- **Develop and demonstrate mine detection sensors and software for autonomous cueing of targets**
- **May include various types of sensors (Ground-penetrating radar, infrared, acoustics, magnetic, chemical, quadrupole resonance, etc)**
- **Configurable for robotic standoff applications**
- **Major investment in aided target recognition algorithms for autonomous detection of anti-personal mines**



Autonomous Mine Detection Sensors

- **OBJECTIVE:** Develop and demonstrate mine detection sensors suite for autonomous platform
- **CONTRACT TYPE:** Cost Plus Fixed Fee
- **ESTIMATED VALUE:** \$9-11M total for multiple contracts
- **KEY MILESTONES:** 3QFY02 BAA for white papers & demo
1QFY03 solicitation
2QFY03 award
FY04 deliver prototype & downselect
FY07 demonstration
- **TECHNICAL CONTACT:** Tom Becker 703-704-1255
- **ACQUISITION CONTACT:** Rick Forsberg 732-532-3547
- **SOLICITATION # or RFQ#:** TBD



SUBJECT MATTER EXPERTS

MANAGERS AVAILABLE AT CECOM EXHIBITS

- **SMALL BUSINESS INNOVATION RESEARCH (SBIR)**
Suzanne Weeks, 732 427-3275
Email Suzanne.Weeks@mail1.monmouth.army.mil
- **INDEPENDENT RESEARCH & DEVELOPMENT (IR&D)**
Barbara Hartley, 732 532-0353
Email Barbara.Hartley@mail1.monmouth.army.mil
- **COOPERATIVE R&D AGREEMENTS (CRDAs)**
Randolph Jackson, 732 532-0364
Email Randolph.Jackson2@mail1.monmouth.army.mil



WEBSITES

- **Broad Area Announcement (BAA):**
<http://abop.monmouth.army.mil/>
Go to *New User Registration* to enroll to view solicitations, etc.
- **Small Business Innovation Research (SBIR)Program:**
<http://www.acq.osd.mil/sadbu/sbir> (Phase I Solicitation)
<http://www.aro.army.mil/arowash/rt/> (Phase II Plus)
- **Independent Research & Development (IR&D)Program:**
<http://www.dtic.mil/ird/>